

AF
SW

TRANSMITTAL OF APPEAL BRIEF

Docket No.
DWH-11602/29

In re Application of: Shyam Keshavmurthy et al.

Application No.
10/623,330-Conf. #3284

Filing Date
July 18, 2003

Examiner
C. J. Barnes

Group Art Unit
2121

Invention: AUTOMATED RAPID PROTOTYPING COMBINING ADDITIVE AND SUBTRACTIVE PROCESSES

TO THE COMMISSIONER OF PATENTS:

Transmitted herewith is the Appeal Brief in this application, with respect to the Notice of Appeal filed: August 29, 2006.

The fee for filing this Appeal Brief is \$ 250.00.

☐ Large Entity ☒ Small Entity

☐ A petition for extension of time is also enclosed.

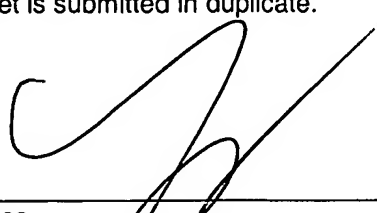
The fee for the extension of time is _____.

☒ A check in the amount of \$ 250.00 is enclosed.

☐ Charge the amount of the fee to Deposit Account No. 07-1180.
This sheet is submitted in duplicate.

☐ Payment by credit card. Form PTO-2038 is attached.

☒ The Director is hereby authorized to charge any additional fees that may be required or credit any overpayment to Deposit Account No. 07-1180.
This sheet is submitted in duplicate.



John G. Posa
Attorney Reg. No. : 37,424
GIFFORD, KRASS, GROH, SPRINKLE, ANDERSON
& CITKOWSKI, P.C.
2701 Troy Center Drive, Suite 330
Post Office Box 7021
Troy, Michigan 48007-7021
(734) 913-9300

Dated: October 30, 2006



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of: Keshavmurthy et al.

Serial No.: 10/623,330

Group No.: 2121

Filed: July 18, 2003

Examiner: C. Barnes

For: AUTOMATED RAPID PROTOTYPING COMBINING ADDITIVE AND
SUBTRACTIVE PROCESSES

APPELLANT'S BRIEF UNDER 37 CFR §1.192

Mail Stop Appeal Brief
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Dear Sir:

I. Real Party in Interest

The real party and interest in this case is Solidica, Inc., by assignment.

II. Related Appeals and Interferences

There are no appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. Status of Claims

The present application was filed with 22 claims. Claims 5, 6, 8, 12-14 and 18 have been canceled. Claims 1-4, 7, 9-11, 15, 17, and 19-22 are pending, rejected and under appeal. Claim 1 is the sole independent claim.

**IV. Status of Amendments Filed Subsequent
Final Rejection**

No after-final amendments have been filed.

V. Summary of Claimed Subject Matter

Independent claim 1 is directed to an automated manufacturing method. The method comprises the steps of receiving a description of an object to be fabricated having a desired geometry and identifying regions in which at least one automated material addition process and at least one automated material subtraction process should occur to fabricate the object in accordance with the description. Toolpaths associated with the material addition and subtraction processes are generated, and the object is generated in accordance therewith. (Specification, page 4, line 27 to page 8, line 18).

VI. Grounds of Objection/Rejection To Be Reviewed On Appeal

A. The rejection of claim 9¹ under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,856,842 to Rebello et al.

B. The rejection of claim 9 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,463,349 to White et al.

VII. Argument

A. The Rejection of claim 9 under 35 U.S.C. §102(e) over Rebello et al..

Claim 9 adds to claim 1 the step of “blending the regions [in which at least one automated material addition process and at least one automated material subtraction process should occur] to eliminate seams that would be generated due to the subtractive process used.”

Claim 9 stands rejected under 35 U.S.C. §102(b) over Rebello et al.

The Examiner’s argument, on page 7 of the final Office Action, is that Rebello et al. teach the step of blending regions, citing column 3, lines 35-37, which read as follows:

“Tooling geometry 62 is obtained from tooling features 132, for example, by applying tooling design rules that impose continuity or other matching conditions for adjoining tool features.”

The Examiner argues that this is done “to eliminate seams (“adjoining tooling features”) that would be generated due to the subtractive process (“material removal”) used.” However, this “disclosure” is synthesized by the Examiner, and is not found in the subject methods. In fact, column 3, lines 35-37 say

¹ Appellant is aware that claim 9 is dependent. Upon confirmation as to the allowability of claim 9 on appeal, Appellant will redraft claim 9 in independent form including all of the limitation of claim 1.

Serial No. 10/623,330

- 3 -

62310sh

nothing about the elimination of seams, let alone that such seams would be generated due to a subtractive process involving material removal. Since anticipation requires that a reference disclose each and every element or step of the invention as claimed, *prima facie* anticipation has not been established.

B. The Rejection of claim 9 under 35 U.S.C. §102(e) over White et al..

With regard to White et al., the Examiner argues that the limitations of claim 9 are met by the disclosure at column 7, lines 6-12, which reads as follows:

“It may be desirable to conduct two trimming operations, where the first is a high-speed trimming operation, and the second is a contouring trim, designed to produce highly accurate and smooth surfaces on curved components, thereby eliminating the so-called stairstepping often found in additively manufactured components.”

The Examiner again fabricates nonexistent disclosure, by stating that this is done “to eliminate seams (“each material application”) that would be generated due to the subtractive process (“trimming operations”) used.” However, this is not the same as the limitations of the claim, which includes the step of blending regions to eliminate seams, these regions being ones in which at least one automated material addition process and at least one automated material subtraction process should occur. This is neither taught nor suggested by the cited passage of White et al.

Conclusion

In conclusion, for the arguments of record and the reasons set forth above, all pending claims of the subject application continue to be in condition for allowance and Appellant seeks the Board’s concurrence at this time.

Respectfully submitted,

By: 

John G. Posa, Reg. No. 37,424
Gifford, Krass, Groh, Sprinkle,
Anderson & Citkowski, P.C.
PO Box 7021
Troy, MI 48007-7021
(734) 913-9300

Date: October 30, 2006

APPENDIX A
CLAIMS ON APPEAL

1. An automated manufacturing method, comprising the steps of:
receiving a description of an object to be fabricated having a desired geometry;
identifying regions in which at least one automated material addition process and at least one automated material subtraction process should occur to fabricate the object in accordance with the description;
generating toolpaths associated with the material addition and subtraction processes; and
fabricating the object in accordance with the toolpaths.
2. The method of claim 1, wherein the regions are layers, volumes, lines or voxels.
3. The method of claim 1, wherein the automated material subtraction process includes milling or the use of lasers, knives, hot wires, arc cutters, or plasmas cutters.
4. The method of claim 1, wherein the automated material addition process includes solid-state or fusion welding, laser material deposition, metal spraying, or adhesive bonding.
7. The method of claim 1, further including the step of soft fixturing multiple parts.
9. The method of claim 1, further including the step of blending the regions to eliminate seams that would be generated due to the subtractive process used.
10. The method of claim 1, further including the step of creating enclosed and overhanging features using the additive or subtractive manufacturing processes, or a combination thereof.
11. The method of claim 1, further including the steps of:
identifying changes in the desired geometry;

removing excess material to achieve the desired geometry.

15. The method of claim 1, further including the step of generating enclosed cavities within the object during the fabrication thereof.

17. The method of claim 1, further including the step of repairing an existing mold or other object.

18. The method of claim 1, wherein a tool path associated with additive processing is based on the nature of the additive process used.

19. The method of claim 1, further including the step of incorporating negative draft angles using the additive or subtractive processing.

20. The method of claim 1, further including the steps of:
generating finish paths that are dependent on the flute height of the smallest tool required; and
determining what Z height should be deposited and trimmed prior to finishing based on the flute height of the smallest tool required.

21. The method of claim 1, wherein:
certain features are deposited with excess stock based on feature geometry; and
removing material to enhance the deposition process, or speed the build rate of the object.

22. The method of claim 1, further including the step of generating a conformal support material containment structure.

Serial No. 10/623,330

- 6 -

62310sh

None.

APPENDIX B

EVIDENCE

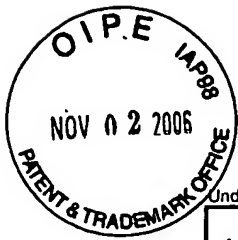
Serial No. 10/623,330

- 7 -

62310sh

APPENDIX C
RELATED PROCEEDINGS

None.



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Application No. (if known): 10/623,330

Attorney Docket No.: DWH-11602/29

Certificate of Mailing under 37 CFR 1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

on October 30, 2006
Date

Signature

Sheryl Hammer

Typed or printed name of person signing Certificate

Registration Number, if applicable

(734) 913-9300
Telephone Number

Note: Each paper must have its own certificate of mailing, or this certificate must identify each submitted paper.

Appeal Brief Transmittal (1 page)
Appeal Brief
\$250 Fee
Postcard